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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/661,786

09/15/2003

Ralf Ringler

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08/24/2005

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EXAMINER

NGUYEN, SANG H

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,786

Applicant(s)

RINGLER ET AL.

Examiner

Sang Nguyen

Art Unit

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,7-12 and 14 is/are rejected.
- 7) ☒ Claim(s) 2,4,6,13 and 15-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/18/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 02/10/04 has been entered. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Pre-Amendment

Applicant's response to Pre-Amendment filed on 02/10/04 has been entered. It is noted that the application contains claims 1-20 by the pre-Amendment on 02/10/04.

Claim Objections

The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

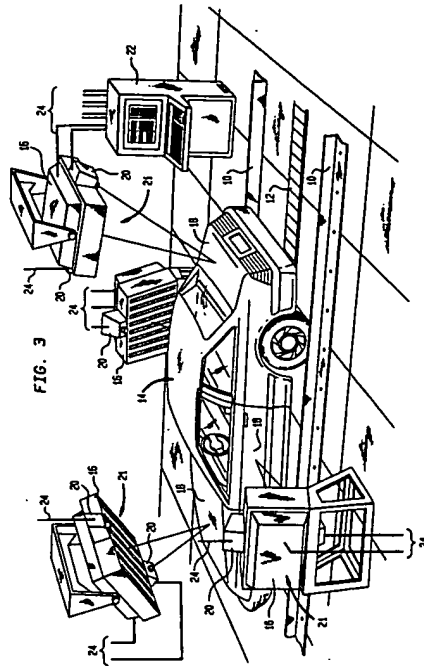
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Fitts et al (U.S. Patent No. 5,142,648).

Regarding claim 1; Fitts et al discloses a method for visually detecting paint gloss deviations in a surface paint coat of a vehicle (14 of figure 3) by means of an illuminating system illuminating (21 of figure 3) the vehicle, comprising the steps:

illuminating outer surfaces of the two sides (18 of figure 3) of the vehicle (14 of figure 3) by the sensor illumination system (21 of figure 3) as well as additional surfaces of a forward and rearward vehicle body portion ((18 of figure 3) by light beaming devices considered to be these monitors (16 of figure 3) of the sensor illuminating system (21 of figure 3) in a partially area manner; and

a camera (20 of figure 3) of a sensor illumination system (21 of figure 3) for observing said outer surfaces (18 of figure 3) and said additional surfaces (18 of figure 3) along at least one marked path (figure 3), wherein said observing camera (20 of figure 3) occurring at a distance (figure 3) from the vehicle (14 of figure 3) predefined viewing ranges and defined viewing positions. See figures 1-8.



Regarding claim 3; Fitts et al teaches about an arrangement of each of the light beaming devices considered to be the monitors (16 of figure) and cameras (20 of figure 3) at a distance (figure 3) from both sides (18 of figure 3) of the vehicle (14 of figure 3) in a longitudinal vehicle center plane (figure 3) for the lateral vehicle surface (18 of figure 3), and approximately in a transverse vehicle center plane by a guide rails (10 of figure 3) and a conveyor track (12 of figure 3) for the forward and rearward vehicle body portions (14 of figure 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitts et al (U.S. Patent No. 5,142,648).

Regarding claim 9; Fitts et al teaches the light beaming devices (21 of figure 3) for the forward vehicle surface (18 of figure 3) are aligned such that the light beam is aligned approximately at an angle (figure 3) with respect to the ground and impinges in a center on a surface to be checked. Fitts discloses all of features of claimed invention except for light beam is aligned at an angle of 20 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts with light beam is aligned at an angle of 20 degrees, since it has been held that the provision of adjustability, where need, involves only routine skill in the art. In re Stevens, 101 USPQ 284 CCPA 1954).

Regarding claim 10; Fitts et al teaches the light beaming device (21 of figure 3) for the rearward vehicle surface (18 of figure 3) is aligned such that a light cone is aligned approximately in the center at an angle (figure 3, for example, see the opposite with forward surface vehicle) with respect to the ground and, in the vertical direction, impinges on a upward-curved area of the rear part, and the light cone covers the lower edge of the rear window. Fitts discloses all of features of claimed invention except for light cone is aligned at an

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angle of 15 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts with light cone is aligned at an angle of 15 degrees, since it has been held that the provision of adjustability, where need, involves only routine skill in the art. In re Stevens, 101 USPQ 284 CCPA 1954).

Regarding claim 12; Fitts discloses all of features of claimed invention except for light cone is aligned at an angle of 90 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts with light cone is aligned at an angle of 90 degrees, since it has been held that the provision of adjustability, where need, involves only routine skill in the art. In re Stevens, 101 USPQ 284 CCPA 1954).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fitts et al (U.S. Patent No. 5,142,648) in view of Crookham et al (U.S. Patent No. 5,636,024 submitted by Applicant).

Regarding claim 5; Fitts discloses a light beam of the respective at least two other light beaming device (16 of figure 3) impinges approximately in the center of the forward and rearward (18 of figure 3) of vehicle body (14 of figure 3), as well as of the lateral vehicles surfaces (18 of figure 3). Fitts teaches all of features of claimed invention except for light cones of the each of said light beaming devices include the entire length of the outer vehicle surfaces and the at least two of the additional surfaces of the forward and rearward vehicle body.

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However, Crookham et al teaches that it is known in the art to provide apparatus and method for inspection semispecular surfaces comprising light cones of the each of said light beaming devices (20 of figure 1) include the entire length of the outer vehicle surfaces (12, 48 of figures 1-2 and 8) and the at least two of the additional surfaces of the forward and rearward vehicle body (12, 48 of figures 1-2 and 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts et al with light cones of the each of said light beaming devices include the entire length of the outer vehicle surfaces and the at least two of the additional surfaces of the forward and rearward vehicle body as taught by Crookham et al for the purpose of more lighting the better to visually identify flaws or defects on entire surfaces of body.

Claims 7-8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitts et al (U.S. Patent No. 5,142,648) in view of Kawamura et al (U.S. Patent No. 4,989,981).

Regarding claim 7; Fitts teaches all of features of claimed invention except for an arrangement of two mutually spaced light beaming devices on each lateral surface of the vehicle, said two spaced light beaming devices having light cones which mutually intersect on the lateral surface, and illumination means for illuminating the outer vehicle surface as well as at least two of said additional surfaces of the forward and rearward vehicle body along a longitudinal vehicle center plane (Y-Y). However, Kawamura et al teaches that it is known in the art to provide an arrangement of two mutually spaced light beaming devices (100 of

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figure 1) on each lateral surface of the vehicle (15 of figure 1), said two spaced light beaming devices (100 of figure 1) having light cones (figure 1) which mutually intersect on the lateral surface (15 of figure 1) and illumination means (1 of figure 2) for illuminating the outer vehicle surface (15 of figure 1) as well as at least two of said additional surfaces of the forward and rearward vehicle body (15 of figure 1) along a longitudinal vehicle center plane (figures 1-2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts et al with an arrangement of two mutually spaced light beaming devices on each lateral surface of the vehicle, said two spaced light beaming devices having light cones which mutually intersect on the lateral surface, and illumination means for illuminating the outer vehicle surface as well as at least two of said additional surfaces of the forward and rearward vehicle body along a longitudinal vehicle center plane as taught by Kawamura et al for the purpose of accurate scanning and measuring various dimensions and surface finish of the object.

Regarding claim 8; Fitts teaches all of features of claimed invention except for the viewing positions on the marked path for each vehicle side are in each case provided between the two of said light beaming devices approximately in a transverse vehicle center plane, and the viewing range, in each case, extends over a partial area of the lateral surface and intersects with the viewing ranges from the forward and rearward ones of said viewing positions on the lateral surfaces. However, Kawamura et al teaches that it is known in the art to

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provide the viewing positions (4 of figure 2) of scanning device (100 of figures 1-2) on the marked path (9 of figure 1) for each vehicle sides (15 of figure 1) are in each case provided between the two of said light beaming devices (100 of figure 1) approximately in a transverse vehicle center plane (figure 1), and the viewing range, in each case, extends over a partial area of the lateral surface and intersects with the viewing ranges from the forward and rearward ones of said viewing positions (4 of figure 2) of the scanning devices (100 of figure 1) on the lateral surfaces of vehicle (15 of figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts et al with the viewing positions on the marked path for each vehicle side are in each case provided between the two of said light beaming devices approximately in a transverse vehicle center plane, and the viewing range, in each case, extends over a partial area of the lateral surface and intersects with the viewing ranges from the forward and rearward ones of said viewing positions on the lateral surfaces as taught by Kawamura et al for the purpose of accurate scanning and measuring various dimensions and surface finish of the object.

Regarding claim 14; Fitts teaches all of features of claimed invention except for an arrangement of at least one of said defined viewing positions on the marked path directly behind at least two of the light beaming devices in the transverse center plane (X-X) of the vehicle, and an arrangement of the additional viewing positions for at least two other of the light beaming devices

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which are assigned to the forward and rearward vehicle body part, said additional view positions arranged in a longitudinal vehicle center plane in each case on both sides of said at least two other light beaming devices on one of said at least two marked paths. However, Kawamura et al teaches that it is known in the art to provide an arrangement of at least one of said defined viewing positions (4 of figures 1-2) of devices (100 of figure 1-2) on the marked path (9 of figure 1) directly behind at least two of the light beaming devices (1 of figure 2) in the transverse center plane (X-X) of the vehicle 915 of figure 1), and an arrangement of the additional viewing positions (4 of figures 1-2) of devices (100 of figure 1-2) for at least two other of the light beaming devices (1 of figure 2) of (100 of figure 1-2) which are assigned to the forward and rearward vehicle body part (figure 1), said additional view positions 4 of figures 1-2) of devices (100 of figure 1-2) arranged in a longitudinal vehicle center plane in each case on both sides of said at least two other light beaming devices 91 of figure 24 of figures 1-2) of devices (100 of figure 1-2) on one of said at least two marked paths (9 of figure 14 of figures 1-2) of devices (100 of figure 1-2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts et al with an arrangement of at least one of said defined viewing positions on the marked path directly behind at least two of the light beaming devices in the transverse center plane (X-X) of the vehicle, and an arrangement of the additional viewing positions for at least two other of the light beaming devices which are assigned to the forward and rearward vehicle body part, said

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additional view positions arranged in a longitudinal vehicle center plane in each case on both sides of said at least two other light beaming devices on one of said at least two marked paths as taught by Kawamura et al for the purpose of accurate scanning and measuring various dimensions and surface finish of the object.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fitts et al (U.S. Patent No. 5,142,648) in view of Kaya et al (U.S. Patent No. 6,398,870).

Regarding claim 11; Fitts teaches the light beaming device on the forward vehicle body is aligned such that the light cone impinges in the vertical direction on the upward-curved area of the forward part, and the light cone partially covers the vehicle hood. However, Kaya et al teaches that it is known in the art to provide the light beaming device (1 of figure 2) on the forward vehicle body (4 of figure 2) is aligned such that the light cone impinges in the vertical direction on the upward-curved area of the forward part, and the light cone partially covers the vehicle hood (4 of figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine a method for visually detecting paint gloss deviations in a surface paint coat of a vehicle of Fitts et al with the light beaming device on the forward vehicle body is aligned such that the light cone impinges in the vertical direction on the upward-curved area of the forward part, and the light cone partially covers the vehicle hood as taught by Kawamura et al for the purpose of accurate scanning and measuring defect on the body.

Allowable Subject Matter

Claims 2, 4 6, 13, and 15-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, taken alone or in combination, fails discloses or render obvious a method for visually detecting paint gloss deviations of a surface body comprising all the specific elements with the specific combination including of the at least one marked path consists of a semicircle around the lateral surfaces of the vehicle and an adjoining segment of a circle to the forward and rearward vehicle body and on said at least one path, the defined viewing positions are assigned to the light beaming devices , and wherein there are additional positions for looking at the outer and additional vehicle surfaces between said defined viewing positions on the one of said at least one marked path as set forth claim 2.

The prior art of record, taken alone or in combination, fails discloses or render obvious a method for visually detecting paint gloss deviations of a surface body comprising all the specific elements with the specific combination including of a viewing range from each lateral viewing positions on the marked path supplement each other to cover the entire lateral vehicle surface and overlap one another with the viewing ranges from the forward ones of viewing positions and

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the rearward ones of the viewing positions onto the forward and rearward vehicle

body as set forth claim 5.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. File et al (6532066) discloses vision system for identification of defect; Alders et al. (6320654) discloses method for the automated recognition of surface defect in body; Keshavmurthy (6266138) discloses system and method for detecting defects in a surface a workpiece; MacKenzie (5862199) discloses method and apparatus for measuring thickness of paint layer; Ventura et al (5436726) discloses flaw highlighting light panel; Yazejian (5414518) discloses method and apparatus for the evaluation of reflective surfaces; Utsumi 95160977) discloses position detection device; or Klenk et al (4918321) discloses reflected light scanning method and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

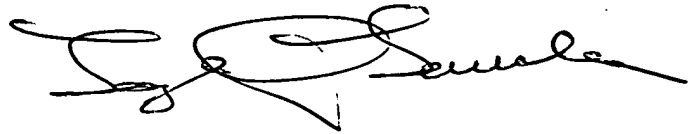
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Sang Nguyen/SN

August 10, 2005

LAYLA G. LAUCHMAN
PRIMARY EXAMINER